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COGNITIVE COMPLEXITY AND AESTHETIC PREFERENCE

by



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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Cognitive Complexity and Aesthetic Preference" submitted by Kerrie Pain in partial fulfillment of the requirements for the degree of Master of Arts.

Abstract

The purpose of this study was to explore the relationship between cognitive abstractness and preference for complex and abstract stimuli. It was hypothesized that cognitively abstract Ss would prefer complex and abstract stimulus materials, and, conversely, that cognitively concrete Ss would prefer simple and concrete materials.

Two hundred and nineteen Ss were administered Tuckman's Individual Topical Inventory (ITI) and an experimental aesthetics questionnaire, consisting of one version of a short story excerpt and a set of preference questions. Thirty-four cognitively abstract and twenty-six cognitively concrete Ss were selected on the basis of their scores on the ITI, and the responses of these Ss to the aesthetics measure were compared in the final analysis. Four versions of the short story excerpt were used, each with high or low abstractness of writing style, and high or low complexity of character described. Therefore, this was a 2 x 2 x 2 factorial design, with two levels of cognitive abstractness, two levels of stimulus abstractness and two levels of stimulus complexity.

The results for the complexity manipulation were as predicted, with the cognitively concrete Ss rating the simple versions significantly more interesting and enjoyable than the complex versions, and the cognitively abstract Ss rating the complex versions preferable to the simple versions, although the latter differences were not significant. However, the results for the manipulation of abstractness were opposite to those predicted, with the cognitively concrete Ss preferring the abstract versions, and the

cognitively abstract Ss preferring the concrete versions (although, again, only the results for cognitively concrete Ss' were significant).

Two ad hoc hypotheses explained most of these results. In one, concrete is considered more complex because of evidence that it evokes a large number of associations. Using this criterion, and the verified hypothesis about preference and stimulus complexity, the reversal of the results can be explained. A second hypothesis is that the abstract version is preferred by the concrete Ss because of their deference to authoritative judgments that abstract language is more sophisticated and, therefore, preferable. However, neither of these hypotheses can adequately explain all of the results from the research.

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Introduction

In the field of aesthetics, there is a continuing controversy over what is 'good' art. Fashions in painting, literature, music and drama change with time, and what is popular with one generation may be distasteful to the next. Even within a given period, different types of art appeal to different groups of people. Some enjoy impressionistic paintings; many find them incomprehensible. Likewise, some readers enjoy books such as Joyce's Ulysses, but many others would rather read an Agatha Christie mystery.

However, little is known about which aspects of art people are reacting to, nor about which personal characteristics lead to differential preferences for aesthetic materials. Information theory is one approach to this problem which is applicable to different kinds of aesthetic materials, and which is also a source of hypotheses concerning the kinds of individual differences which may affect aesthetic judgment.

Using concepts from information theory, (Garner, 1962; Moles, 1966), researchers have attempted to quantify the amount of information present in aesthetic materials, whether this information is in the form of linguistic, visual, or auditory symbols. The number of units of independent information a stimulus contains determines its level of complexity. As defined by Berlyne (1971), "A pattern is considered more complex, the larger the number of independently selected elements it contains (p.142)."

Complexity and Preference

A large number of studies have investigated the effect of information

complexity on aesthetic preference, and many of these have found an inverted U-shaped relationship between the two variables. As complexity increases up to a certain level, preference also increases, but beyond this optimal point, increases in complexity result in decreased preference. This U-shaped relationship seems to be fairly consistent across sensory modalities and has been found by researchers using a wide variety of stimuli, e.g., Day (1967) using random polygons; Dorfman (1965) using matrix patterns differing in grain; Kamman (1966) using poetry; Vitz (1966a) using tones; Evans (1969) using prose passages, and Walker (1970) using black and white graphics.

Other studies have found a simple, direct or inverse relationship between preference and complexity. Vitz (1964) found that preference increased with complexity of tonal sequences; Osborne and Farley (1970) found an increasing preference for more complex modern paintings; and Walker (1970) found a direct relationship between preference and complexity of stage sets, but an inverse relationship between preference and complexity of tartan reproductions. However, with a wider range of complexity, U-shaped relationships may emerge. Evidence for this is provided by Vitz (1964, 1966a). With his original (1964) tonal sequences he found a simple, direct relationship between complexity and preference, but with a wider variation in complexity (1966a) he found the predicted U-shaped curve.

Other investigations have found more complex relationships between aesthetic preference and stimulus complexity. Terwilliger (1963) postulated that preference for complexity is affected by its adaptation

level. His data supported this hypothesis, forming an inverted U-shaped curve, with a slight depression at the median, (or adaptation level), as is typical in research into adaptation level effects. However, Terwilliger's hypothesis has not received any additional support from other published research in the area. While there are often slight dips in the preference curves, these seem to be a result of stimulus peculiarity, rather than of an adaptation-level effect (Day, 1967).

Preference ratings are also affected by stimulus factors other than complexity. Munsinger and Kessen (1964) found that the preference ratings for a number of polygons varying in complexity formed a W- rather than an inverted U-shaped curve because of an increased preference for more easily identifiable (very simple) and more meaningful forms at either end of the continuum. However, when they controlled for these variables, the data resumed the predicted U-shaped curve. Also, Eisenman (1967a) found that symmetrical forms were preferred more than asymmetrical forms; the most preferred shapes tended to be symmetrical and of moderate complexity. While factors such as symmetry, familiarity and meaningfulness undoubtedly affect preference ratings, the influence of complexity alone, with these factors controlled, is fairly consistently curvilinear.

Individual Differences and Preference for Complexity

Dorfman (1965) and Dorfman and McKenna (1966) separated their Ss into subsets according to the most preferred level of complexity, and found an inverted U-shaped relationship between complexity and preference for each of these subsets, as well as for their samples as a whole.

Kamman (1966) found this same curvilinear relationship for individual Ss. Using poems which had previously been rated for complexity by the Ss, he found that each of these Ss preferred his own intermediate level of rated complexity, with preference decreasing for the selections with complexity ratings above or below this point.

An inverted U-shaped relationship similar to the one between aesthetic preference and stimulus complexity has been hypothesized between environmental complexity and level of information processing (Schroder, Driver, and Streufert, 1967). They have hypothesized that an intermediate level of environmental complexity is conducive to the highest level of information processing and, also, that this optimal level of environmental complexity varies among individuals at different stages of cognitive development. This is supported by a study by Schroder et al. (1967, p.151) in which they found that the highest level of information processing occurred with moderate environmental complexity. They also found that cognitively abstract groups of Ss performed better than did cognitively concrete groups at all levels of environmental complexity, particularly at moderate levels.

Harvey, Hunt and Schroder (1961) have proposed a theoretical model concerning these differences in ability to process environmental complexity. They postulate that individuals progress in their ability to cope with external stimuli through a continuing process of differentiation and integration of concepts. As this process continues, the individual's conceptual structure moves from a state of concreteness, with little differentiation among concepts, to a state of abstractness, with a high

level of both differentiation and integration of concepts. Associated with these levels of concreteness and abstractness are a number of behavioral patterns arising from individual differences in ability to go beyond the immediate physical situation in making responses.

Based on these abilities, Harvey et al. (1961) have postulated four major personality types representing modal points on a continuum from highly abstract to highly concrete functioning. The most concrete individuals (Type I) have a relatively undifferentiated conceptual system. Behaviorally, this is expressed in high stimulus-response requiredness, i.e. for a given activating stimulus, the response is relatively fixed. Conversely, the most abstract individuals (Type IV) are capable of giving very flexible responses to a given stimulus, since their conceptual system is both well differentiated and well integrated. Type II and Type III individuals are intermediate on this scale, with Type II individuals more concrete in their functioning than Type III individuals.

Researchers using the theory of cognitive functioning developed by Harvey et al. (1961), as well as those using similar theories in the general area of cognitive complexity, (e.g., Mayo and Crockett, 1964; Leventhal and Singer, 1964), have found that abstract individuals are more able to process inconsistent or ambiguous information than are concrete individuals. Several facets of this ability have been brought out by the research in impression formation. Mayo and Crockett (1964) found that concrete Ss tend to form more one-sided, univalent views of an inconsistent target person, whereas more abstract Ss were able to integrate the incongruent information and arrive at a more unified,

ambivalent final impression. In another study, Ware and Harvey (1967) found that more concrete Ss showed more need for cognitive consistency, formed impressions more quickly, and were more certain of these impressions than were more abstract Ss. More concrete Ss also changed their opinions more than did abstract Ss when they were presented with new, inconsistent information concerning a target person (Leventhal and Singer, 1964; Mayo and Crockett, 1964).

However, these studies are concerned, primarily, with the Ss' ability to process complexity, whereas the focus of the research in aesthetics and of this study, is on Ss' expressed preference for different levels of complexity. The only study in the area of cognitive complexity which has directly measured preference rather than ability was done by MacNeil and Rule (1970). In a sensory deprivation study, they found that the cognitively abstract Ss requested the complex form of a message more often than the simple form, and conversely, that the cognitively concrete Ss requested the simple form of a message more often than the complex form.

The hypothesis that more abstract Ss prefer more complex stimuli also receives tangential support from two studies concerning individual differences and aesthetic judgment. Munsinger and Kessen (1964) found that experience with variability, whether it was induced experimentally, or was a result of professional involvement with the stimuli, tended to increase Ss' preference for more complex materials. They interpreted this as an indication that "Human beings prefer an amount of cognitive uncertainty which matches their processing ability (p.22)." Also,

Child (1965) found that tolerance for complexity, a characteristic of cognitively abstract Ss, was significantly correlated with aesthetic judgment, as measured by agreement with experts. Since Munsinger and Kessen (1964) found that experts prefer more complex stimuli, it follows that abstract Ss should also prefer more complex materials. These studies support the hypotheses that cognitively abstract Ss prefer more complex aesthetic materials than do cognitively concrete Ss and that these differences are attributable, to some extent, to the individual's differential abilities to process complex environmental stimuli.

Complexity and Abstractness

One area of ambiguity in Harvey, Hunt and Schroder's (1961) theory concerns the use of the terms 'abstractness' and 'complexity'. The general area in which they are working is popularly termed cognitive complexity, yet Harvey et al. have chosen to refer to their continuum as one of cognitive abstractness. The difference between what is meant by the two terms has never been specified. In the stimulus dimensions, the terminology is more consistent, since most researchers refer to the complexity of the stimulus information with little reference to stimulus abstractness.

In dealing with verbal stimuli, however, information may vary along both of these dimensions, i.e. from simplicity to complexity and from concreteness to abstractness. Both abstract and complex stimuli require a high level of cognitive functioning to be understood. Understanding complex stimuli requires the ability to process a number of environmental stimuli at once, and understanding abstractness relies on the ability to

process and generalize from non-specific stimuli (Goldstein and Scheerer, 1941). In order to explore the Ss' reactions to this additional dimension of information, complexity and abstractness were defined and varied separately in this study.

Complexity is defined here in terms of the manifest content of the passage. A complex message is defined as one which contains some inconsistent, incongruent information, whereas a simple passage is defined as one which contains only congruent material, hence less information. As in the studies of impression formation cited earlier (e.g., Mayo and Crockett, 1964; Ware and Harvey, 1967), complex information provided both positive and negative attributes, whereas simple information provided only one dimension (negative).

Abstractness and concreteness, on the other hand, were defined here in terms of the specificity of reference of the words and phrases used by the author, and in terms of the accessibility of their referents to the physical senses. A highly concrete word or phrase is defined as one which refers explicitly to a particular item which can be readily imaged through the physical senses. Implicit in this definition are several elements which influence the abstractness or concreteness of a given word or phrase.

- a) Reference to a class of objects or to a general concept is more abstract than reference to a specific member of a class or to one element of a concept, e.g. 'Piano' is a special instance of the general class 'Musical instruments' and so is more concrete. Also, 'oak leaf' is a special instance of the general concept 'leaves' which

is a more general term to which all concrete instances of leaves are subordinated (Werner, 1948, p.243).

b) A word whose referent is accessible to the physical senses is more concrete than one whose referent is intangible. A word is concrete to the extent that it can form a specific image through one of the physical senses, e.g., 'To run' is more concrete than 'To be'. This sense of concreteness is close to Paivio's definition of the imagery value of a word (Paivio, 1971) and also to Harvey's definition of a concrete concept as one tied to the physical attributes of the activating stimulus.

c). A word or phrase is abstract to the extent that it requires a mental act to be fully imaged or understood. This includes the manipulation of spatially or temporally remote events and is reflected in a number of stylistic features of writing.

i) Use of comparative terms requires an ability to use something beyond what is stated to fully grasp the meaning, e.g., 'larger' is more abstract than 'big'.

ii) Common words are more concrete than uncommon words since their referents are more readily and easily imaged, e.g., 'dog' evokes a more spontaneous, more concrete image than does 'canine', even though they technically have the same meaning.

On the basis of the research and the theoretical background presented above, a direct relationship was predicted between an individual's cognitive capacity and his preference for abstract and complex materials.

Specifically, it was hypothesized that:

1. There is an interaction between Ss' level of cognitive abstractness and level of stimulus complexity, with cognitively abstract Ss rating complex materials more interesting and enjoyable than simple materials, and cognitively concrete Ss rating simple materials more interesting and more enjoyable than complex materials.
2. There is an interaction between Ss' level of cognitive abstractness and level of stimulus abstractness, with cognitively abstract Ss rating abstract materials more interesting and enjoyable than concrete materials and cognitively concrete Ss rating concrete materials more interesting and enjoyable than abstract materials.

Method

The basic format of the study was a 2 x 2 x 2 factorial design with two levels of S cognitive abstractness, two levels of stimulus complexity, and two levels of stimulus abstractness. An aesthetic preference questionnaire was administered to several classes of students along with the Tuckman Individual Topical Inventory (ITI). Subjects high and low in cognitive abstractness were chosen on the basis of their scores on the ITI, and their responses to the aesthetic preference measures were analyzed to determine the relative preferences of cognitively abstract and concrete Ss for abstract and complex materials.

Selection of Subjects

The Ss in the study were students from ten Spring and Summer session courses at the University of Alberta. The questionnaires were administered during their regular classroom hours. However, participation was voluntary, and approximately a third of the students contacted did not take part. In all, 219 Ss completed the questionnaires, and from these, 26 cognitively concrete and 34 cognitively abstract Ss were chosen for the final analyses.

The selection of these extreme groups was made on the basis of scores on the Tuckman Individual Topical Inventory (ITI). This is a paper-and-pencil test which classifies Ss into the four levels of cognitive abstractness postulated by Harvey, Hunt, and Schroder (1961). The test consists of 6 hypothetical situations (e.g., "Imagine that someone has criticized you." "Think about the topic of people in general."). For each of these

situations, there are 6 pairs of possible responses and the S is to choose the response from each pair which he feels is closest to the way in which he would react. Each response is representative of reactions at one of the four levels of cognitive abstractness and the number chosen in each level is totalled to give the score for each S. In this study, Ss with Type I (concrete) or Type IV (abstract) scores high enough to be in the 9th or 10th decile were included in the final analysis. (See Appendix A for a copy of the ITI and scoring norms.)

Short Story Excerpts

Using the definitions of complexity and abstractness given above (p.8), an excerpt from the short story, Fun with a Stranger, by R. Yates was rewritten to give 4 new versions with high or low complexity of character and high or low abstractness of writing style. Character complexity was manipulated through a change in the final paragraph. In the original story, this paragraph provided evaluatively positive information about a teacher who had previously been described as authoritarian and intolerant. For the simple version, this paragraph was rewritten, omitting the positive information, thus leaving a one-sided impression and a simpler form of information.

The simple and the complex versions of the excerpt were further revised using an abstract and a concrete writing style. Care was taken with the manipulation of style to change only the manner of expression and to leave the information provided by the excerpts identical. Changes in writing style were made according to the definitions of abstractness stated earlier (p.8). In the abstract, as opposed to the

concrete version, reference was made to classes of objects (e.g., pencils, children) rather than to specific instances of that class (e.g., the pencil, boys and girls); descriptions were made less specific and less imageable with reference to Paivio's (1972) norms (e.g., "timeworn" rather than "old and gray and worn-down"); and words and phrases were included that seemed to require a mental act in order to be fully understood. One of the most frequent applications of the last criterion, and one of the most obvious differences between the two styles, was the use of indirect speech in the abstract versions and direct quotations in the concrete versions. These changes were made because indirect speech requires a mental translation in order to be fully imaged. For example, "'What's the trouble back there,' she would demand" forms a more immediate, more concrete picture of the situation than does "She would demand to know what the trouble was...."

The manipulations of complexity and abstractness were tested by giving each of ten Ss two versions of the excerpt varying either in level of abstractness, or in level of complexity, and asking them to state which of the two was more imageable, more abstract, and more complex. Their ratings of both complexity and imageability were as predicted, with all of the Ss rating the complex versions more complex and the concrete versions more imageable. Two Ss reversed the ratings of abstractness; however, this was a result of their use of different definitions of abstractness, rather than of different perceptions of the excerpts, themselves. Since their ratings of imageability were as predicted, and the responses of the other Ss on the abstraction question were according to the definition

above, the excerpts were used in this form. (See Appendix B for copies of Story Excerpts.)

Dependent Measures

The Ss were asked to answer 10 questions concerning the stories they had read (see Appendix C). Of these questions, four were of particular interest since they directly concerned how interesting and/or enjoyable the subject found the excerpt that he read. These questions were:

7. How interesting was the story to read?
8. Would you be interested in discussing the story with someone else?
9. How much did you enjoy the story?
10. Would you like to read other selections by the same author?

The other questions concerning the excerpts asked the Ss to rate the abstractness, imageability, complexity of character, development of character, and ease of understanding the story. The first question was intended to focus attention on the excerpt as a whole, and had no bearing on the hypotheses.

Procedure

Ss were tested in classes during their regular lecture hours. Each student was given a booklet containing the ITI, one of the four versions of Fun with a Stranger, and the set of questions measuring preference and background. The two questionnaires were presented as parts of separate studies in order to avoid, as much as possible, contamination of the responses to the preference questions by association with the personality measure.

The ITI was introduced as part of a long-range study to detect differences among spring, summer and winter session students, whereas the story excerpt and preference questionnaire were presented as a part of the E's Master's thesis in aesthetic judgment. The purposes of the two studies and general instructions were given verbally, and the specific instructions for each questionnaire were included as part of the booklet. Ss were instructed to work straight through the questionnaires, and return the booklet to the E when finished. (See Appendix D for instructions used). Because some of the classes tested were held at the same time, two E's administered the questionnaires to the different classes. Both of the E's were graduate students in Psychology.

These directions were used for all but the first three classes tested. In these classes the questionnaires were administered one at a time, and the second study was attributed to a Psychology professor rather than to the experimenter. In order to match their responses to the two questionnaires, Ss were instructed to put their names on the answer sheets. This was a very inefficient method of presentation, and considerable resentment was expressed concerning the need for names. Therefore, the method was subsequently changed to that given above. Of the 60 Ss used in the final analyses, 13 came from these three classes and subsequent analyses revealed no differences between the classes given the questionnaires under the two sets of instructions.

Results

The questionnaires were administered in ten different classrooms, so an analysis of variance was done to determine whether there were differences between the classes tested. The results showed no significant differences among the classes for any of the four preference questions, nor for any of the ratings of abstractness, complexity, imageability, character development, or ease of understanding. Also, there were no differences between classes for the average number of books read, number of English courses taken, nor for rated interest in literature. Therefore, the data were collapsed over classes for the subsequent analyses.

Since different reactions were predicted for Type I and Type IV Ss, separate analyses of variance and correlation matrices were computed for each type, in addition to the overall analyses of variance comparing types. These analyses were very liberal, particularly for the questions for which there were no a priori hypotheses. However, in view of the fact that this was largely an exploratory study, particularly concerning reactions to stimulus abstractness, a liberal test was considered appropriate in order to detect possible differences for later research to explore. The use of the separate analyses also provided a more satisfactory test than that provided by more conventional, post-hoc analyses for unequal cell n's. The pertinent results of the overall analysis are presented in Appendix E, those for the separate analyses by Type are presented in Appendices F and G, and the correlation matrices are in Appendix H.

Reactions to the Experimental Manipulations

The Ss' ratings of character complexity corresponded to the manipulation, i.e. the versions describing the character in bipolar (positive and negative) terms were rated more complex than those described in univalent (negative) terms ($F = 5.89$, $df = 1/52$, $p < .02$; Source Table, p.66). However, in the separate analyses of variance computed for Type I (concrete) and Type IV (abstract) Ss, the effect of manipulated complexity was significant only for the Type IV Ss ($F = 7.14$, $df = 1/30$, $p < .02$; Source Table, p.73); the results for the Type I Ss were in the predicted direction, but insignificant. (Means are presented in Table 1.)

Table 1

Mean Ratings of Character Complexity

(1 = very simple character and 6 = very complex character)

	Type I	Type IV	Combined Groups
Simple Versions	3.31 (n=13)	3.06 (n=18)	3.16 (n=31)
Complex Versions	3.92 (n=13)	4.38 (n=16)	4.18 (n=29)

As expected, there was a significant main effect for the manipulation of abstractness on the answers to the question asking for ratings of abstractness of the writing style in the excerpt ($F = 8.20$, $df = 1/52$, $p < .01$; Source Table, p.67). However, these ratings were in the opposite direction to those predicted. The abstract versions were rated more concrete and the concrete versions were rated more abstract by Type I Ss ($F = 4.63$, $df = 1/22$, $p < .05$; Source Table, p.71) and there was a marginally significant tendency for Type IV Ss to reverse the ratings

($F = 3.30$, $df = 1/30$, $p .08$; Source Table, p.74). (The means are presented in Table 2.) There were no significant interactions for this question.

Table 2

Mean Ratings of Abstractness of Writing Style

(1 = very concrete style; 6 = very abstract style)

	Type I	Type IV	Combined Groups
Abstract Versions	2.29 (n=14)	2.25 (n=20)	2.26 (n=34)
Concrete Versions	3.58 (n=12)	3.14 (n=14)	3.35 (n=26)

The second question concerning manipulated abstractness asked Ss to rate the ease of imaging the excerpts. The only difference for this question was a marginally significant tendency for the Type I Ss to rate the concrete version easier to image than the abstract version ($F = 3.09$, $df = 1/22$, $p .10$; Source Table, p.71). (Means are presented in Table 3.) Unlike the ratings of abstractness, this result is in the direction predicted by the use of imageability as one of the criteria for concreteness.

Table 3

Mean Ratings of Imageability of Excerpts

(1 = very easy to image; 6 = very difficult to image)

	Type I	Type IV	Combined Groups
Abstract Versions	2.29 (n=14)	3.60 (n=20)	2.71 (n=34)
Concrete Versions	3.58 (n=12)	2.50 (n=14)	3.00 (n=26)

The correlation matrices provide some indication of the meanings which the Ss attributed to the questions about imageability and concreteness. Contrary to Paivio (1971), who found a high correlation between concreteness and imageability for his Ss, rated concreteness and imageability were not correlated for the Type I Ss. For them, imageability is correlated only with ease of understanding ($r = .44, p < .03$). However, there are a number of significant correlations with concreteness. For the Type I Ss, concreteness is correlated with good character development ($r = .62, p < .001$) and with all four of the preference measures: interest in reading the excerpt ($r = .58, p < .001$), interest in discussing the excerpt ($r = .49, p < .02$), enjoyability ($r = .43, p < .03$), and desire to read other selections by the same author ($r = .63, p < .001$).

For Type IV Ss, on the other hand, rated concreteness and imageability are correlated ($r = .43, p < .02$), as expected. Imageability is also correlated with good character development ($r = .35, p < .05$), and ease of understanding ($r = .41, p < .02$). Rated concreteness is correlated with ratings of a simple character ($r = .35, p < .05$), and ease of understanding ($r = .53, p < .001$). Unlike the Type I Ss, the Type IV Ss' ratings of concreteness are negatively correlated with interest in discussing the excerpt ($r = -.33, p < .06$). (The correlation matrices for Type I and Type IV Ss' ratings are presented in Appendix H.)

Tests of the Hypotheses

An interaction was predicted between S cognitive abstractness and level of stimulus complexity, with concrete Ss preferring the simple versions of the excerpt, and abstract Ss preferring the complex versions.

However, of the four questions measuring preference, this interaction was marginally significant only for rated interest in discussing the excerpt ($F = 3.76$, $df = 1/52$, $p < .06$; Source Table, p.64). There was also a marginally significant main effect for complexity for this question ($F = 3.37$, $df = 1/52$, $p < .08$; Source Table, p.64) on the overall analysis. However, both the interaction and the main effect were attributable to the Type I Ss' preference for simple rather than complex versions ($F = 7.06$, $df = 1/22$, $p < .02$; Source Table, p.69). For the Type IV Ss, rated interest in discussing the simple or complex versions was not significantly different in the separate analysis. (The means are presented in Table 4.) The results for the other questions rating interest and enjoyment were parallel to those for rated interest in discussing the excerpt, but insignificant.

The second hypothesis predicted an interaction between cognitive abstractness and level of stimulus abstractness. It was hypothesized that concrete (Type I) Ss would prefer the concrete versions, and that abstract (Type IV) Ss would prefer the abstract versions. However, the results of the study were exactly opposite to those predicted. The Type \times Abstractness interaction was significant for the question rating interest in reading the excerpt ($F = 6.12$, $df = 1/52$, $p < .02$; Source Table, p.64), and marginally significant for the questions rating interest in discussing the excerpt ($F = 3.37$, $df = 1/52$, $p < .08$; Source Table, p.64) and enjoyment ($F = 3.57$, $df = 1/52$, $p < .08$; Source Table, p.65). However, in each case, the Type I Ss rated the abstract version preferable to the concrete version, and the Type IV Ss rated the concrete version preferable to the abstract version.

As with the ratings for complexity, these interactions are primarily

Table 4

Mean Ratings of Preference for Complexity

(In each case 1 = very much preferred; 6 = not at all preferred.)

Simple Versions Complex Versions

Interest in Discussing Excerpts:	Type I	2.46 (n=13)	3.92 (n=13)
	Type IV	3.39 (n=18)	3.38 (n=18)
	Combined Groups	3.00 (n=31)	3.62 (n=29)
Interest in Reading Excerpts:	Type I	2.62	3.14
	Type IV	2.94	2.63
	Combined Groups	2.81	3.24
Enjoyment of Excerpts:	Type I	2.62	3.23
	Type IV	2.93	2.69
	Combined Groups	2.81	2.93
Interest in Reading Others by Same Author:	Type I	2.92	3.62
	Type IV	3.39	2.94
	Combined Groups	3.19	3.24

Note.--The cell n's for the latter three questions are the same as those for the first question.

attributable to the preferences of the Type I Ss. The results of the separate analyses revealed no significant results for the Type IV Ss, but a significant tendency for the Type I Ss to be more interested in discussing the abstract version ($F = 4.31$, $df = 1/22$, $p < .05$; Source Table, p.69).

Table 5

Mean Ratings of Preference for Abstractness

(In each case 1 = very much preferred, 6 = not at all preferred)

	Abstract Versions		Concrete Versions	
Interest in Discussing Excerpts:	Type I	2.64		3.83
		(n=14)		(n=12)
	Type IV	3.50		3.21
		(n=20)		(n=14)
	Combined Groups	3.15		3.50
		(n=34)		(n=26)
Interest in Reading Excerpts:	Type I	2.29		3.58
	Type IV	3.00		2.50
	Combined Groups	2.71		3.38
Enjoyment of Excerpts:	Type I	2.64		3.25
	Type IV	3.10		2.43
	Combined Groups	2.91		2.81
Interest in Reading Others by Same Author:	Type I	3.00		3.58
	Type IV	3.40		2.86
	Combined Groups	3.24		3.19

Note.--The cell n's for the latter three questions are the same as those for the first question.

There was also a marginally significant tendency for the Type I Ss to be more interested in reading the abstract versions than the concrete ones ($F = 4.17$, $df = 1/22$, $p < .06$; Source Table, p.69). (Means are presented in Table 5.) There were no significant differences for the Type I Ss' rated enjoyment of the excerpts. Nor were there any significant differences for interest in reading other work by the same author for any of the Ss.

Additional Information

There was a significant three-way interaction for the Ss' ratings of ease of understanding the excerpts ($F = 3.64$, $df = 1/52$, $p < .07$; Source Table, p.68). As above, this was a result of ratings by the Type I Ss. (See means, Table 6). Type IV Ss rated all of the versions very easy to read, and there were no significant results for this question on their separate analysis. For the Type I Ss, there was a significant interaction between stimulus abstractness and complexity ($F = 5.01$, $df = 1/22$, $p < .04$; Source Table, p.71), with the abstract - complex and, to some extent, the concrete - simple version rated more difficult to understand, although there were no significant differences among the ratings of the different versions (see Figure 1).

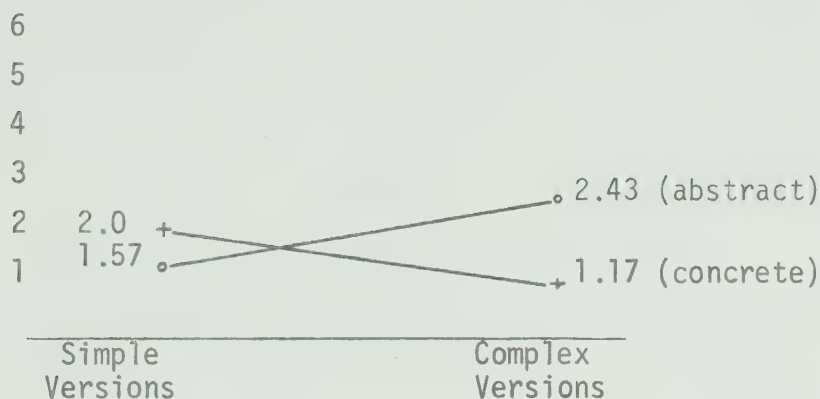
Table 6

Mean Ratings of Ease of Understanding

(1 = very easy to understand; 6 = very difficult to understand)

Version	Type I	Type IV	Combined Groups
Abstract - Simple	1.57 (n=7)	1.80 (n=10)	1.71 (n=17)
- Complex	2.43 (n=7)	1.40 (n=10)	1.82 (n=17)
Concrete - Simple	2.00 (n=6)	1.88 (n=8)	1.93 (n=14)
- Complex	1.17 (n=6)	2.00 (n=6)	1.58 (n=12)

Figure 1

Rated Ease of Understanding for Type I Ss

As with the comparisons of means, Type I and Type IV Ss also differed in their patterns of correlations with ease of understanding. For Type IV Ss, ease of understanding is correlated with their ratings of the story as written from a child's point of view ($r = .37, p < .03$), with rated concreteness ($r = .53, p < .001$) and with imageability ($r = .43, p < .02$). For Type I Ss, ease of understanding was correlated with imageability ($R = .44, p < .02$), and also with a desire to read other selections by the same author ($R = .39, p < .04$).

The final question of interest, which is somewhat related to the manipulation of character complexity, asked how well the character of the teacher was developed by the author. There was a marginally significant Type \times Abstractness interaction for this question ($F = 3.66, df = 1/52, p < .07$). Again, this was attributable to the Type I Ss, who rated character development higher in the abstract than in the concrete versions ($F = 3.86, df = 1/22, p < .07$; Source Table, p.66). For the Type IV Ss, these ratings were almost equal. Of special interest is the fact that there was no significant effect from manipulated character complexity on the Type I Ss' ratings of character

development. For Type IV Ss, the effect of manipulated complexity on ratings of character development approached significance ($F = 2.37$, $df = 1/3$, $p < .13$; Source Table, p.73), with the complex version rated better developed than the simple version. (The means are presented in Table 7).

Table 7

Mean Ratings of Character Development

(1 = very well developed character; 6 = very poorly developed character)

	Type I	Type IV	Combined Groups
Abstract Versions	1.93 (n=14)	2.50 (n=20)	2.26 (n=34)
Concrete Versions	3.00 (n=12)	2.29 (n=14)	2.62 (n=26)
Simple Versions	2.31 (n=13)	2.72 (n=18)	2.55 (n=31)
Complex Versions	2.54 (n=13)	2.06 (n=16)	2.28 (n=29)

Discussion

In light of the methodological problems of this research which arose from the necessity of using two different E's, and from using two different instructional sets, the results of the study must be accepted with some reservations. It is difficult to evaluate the effects of these uncontrolled factors. They may be merely adding to the overall variance in the results, and therefore weakening the effects, on the other hand, they may be reacting with the stimuli to produce spurious results. Because of the methodological uncertainty, this must be regarded as an exploratory study. However, the research did provide interesting patterns of results which provide some support for existing research as well as guidelines for further research.

The major purpose of the study was to examine the relationship between cognitive abstractness and preference for materials varying in complexity and abstractness. It was hypothesized that cognitively abstract Ss prefer complex and abstract materials, whereas cognitively concrete Ss prefer materials that are simple and concrete.

The data provide partial support for this hypothesis in that the Type I Ss preferred the simple to the complex versions of the story, whereas the Type IV Ss showed a statistically insignificant tendency to prefer the complex rather than the simple versions. Although this pattern of results was consistent for all of the preference questions, the Type x Complexity interaction was significant only for rated interest in discussing the excerpts.

These data also provide a partial conceptual replication of MacNeil and Rule's (1970) research, in that the cognitively concrete Ss showed a preference for the simple rather than the complex version of the story.

On the other hand, this research does not support MacNeil and Rule's hypothesis that cognitively abstract Ss prefer more complex information.

The fact that the Type IV Ss were able to classify the excerpts as simple or complex, but did not show any significant differences in preference, may be an indication that complexity is not a predictor of Type IV preference in this situation. Perhaps, under sensory deprivation conditions, as in MacNeil and Rule's study, complex materials enable Type IV Ss to regain their usually high, optimal level of information processing and are, therefore, preferred to simple materials. In the present study, with the stimulation provided by the classroom and the testing situation, either the simple or the complex versions of the story may have provided ample information for optimal processing. This could explain the fact that there was no significant effect for complexity for the Type IV's ratings, although the research by Munsinger and Kessen (1964) and Child (1965) provide indirect evidence that more abstract Ss prefer higher levels of complexity, even in non-deprivation conditions.

A second, more direct explanation may be reflected by the data. The fact that all the preference results are in the predicted direction, but significant for only one question, is perhaps an indication that these excerpts were not sufficiently different to evoke more extreme responses. All of the scores for rated character complexity fall within a very narrow range, and more extreme differences between the simple and complex versions might have resulted in greater differences in the ratings. However, even these small differences in manipulated complexity did have some impact, as indicated by the Type I's greater interest in discussing the simple version, and the Type IV's difference in ratings of complexity for the simple and

complex versions. In sum, neither of these two explanations for the Type IV Ss' preference ratings is very satisfactory.

The fact that the Type IV Ss are able to differentiate the simple and complex versions in their ratings of character, whereas Type I Ss' ratings were in the right direction but not significantly different, may be interpreted as support of Mayo and Crockett (1964) and Ware and Harvey (1967). They reported that concrete Ss are less able to form bipolar impressions of target persons than are more abstract Ss. The results from this study would add that concrete Ss are not only less able to form these complex impressions, they are less capable than the abstract Ss of perceiving these versions as actually being complex. This is consistent with the theory proposed by Harvey et al. (1961) which postulates that one's cognitive structure is not only affected by the complexity of the environment, but also affects the complexity of the environment perceived.

As with complexity, the Type I Ss are responsible for the differences in preference for abstractness and concreteness. It was predicted that Type I Ss would prefer the concrete version of the story and that Type IV Ss would prefer the abstract version. However, the results were exactly opposite to these predictions. The Type I Ss rated the abstract versions significantly more interesting to read, more interesting to discuss, and more enjoyable than the concrete versions. The Type IV Ss also reacted in a direction opposite to that predicted, and rated the concrete versions more interesting to read, more interesting to discuss, and more enjoyable, but these differences were not significant.

The aspects of the stimuli to which the Ss are reacting in these preference ratings are difficult to determine, particularly in view of the

fact that both groups of Ss also rated the abstractness of the excerpts in a direction opposite to that of the original definition. Both Type I and Type IV Ss reversed the ratings of abstractness so that the version defined as concrete by the E was rated more abstract by the Ss and vice versa. If the Ss' own ratings of concreteness and abstractness are used, the results are as predicted, with the Type I Ss preferring the version which they rate as more concrete, and the Type IV Ss preferring the version which they rate as more abstract.

Although favorable to the original theory, this post hoc interpretation is questionable. There is reason to believe that the Ss are using different definitions of abstractness and concreteness than those of the E. First, the Ss' ratings of abstractness, and imageability differ from those of the Ss used in the preliminary test of the manipulations. All of the Ss in the preliminary study rated the concrete versions more imageable than the abstract versions, as expected from the original definitions. However, only three of five rated the abstract and concrete versions as defined, and, although this is not the reversal demonstrated by the experimental Ss, it reflects some confusion about the definition of the abstractness-concreteness dimension.

Secondly, their confusion about the meaning of the abstract-concrete continuum is reflected in the differences between the correlates of their ratings by the experimental Ss. For Type I Ss, there is no correlation between concreteness and imageability as would be expected from the definitions. Instead they seem to be using concreteness as part of a global positive evaluation of the concrete versions. For the Type I Ss, there are significant correlations for concreteness with all four preference

ratings and with the rating of degree of character development. (This latter may also be used by Type I Ss as an evaluative rating, since there are no differences for manipulated complexity, as would be expected if it was being used as a rating of content.) The Type IV Ss, on the other hand, do show a small, but significant, correlation between imageability and concreteness, and their concreteness ratings correlate with other stylistic variables (personality complexity, imageability, ease of understanding). There is even a slight negative correlation with rated interest in discussing the excerpts.

This discussion indicates that acceptance of the original hypothesis on the basis of the Ss' reversal of the ratings of concreteness-abstractness does not seem warranted. Therefore some other post hoc explanation of the results is necessary.

One possible explanation for these results is based on an extrapolation of information theory concepts. The original predictions concerning preference for abstractness were formulated on the basis of the difficulty of processing the quality of information in the abstract versions, since processing this type of information seems to require an ability to go beyond the present stimulation. It was predicted that Type IV Ss, who could process this type of information, would prefer it, and that Type I Ss, with less processing ability, would prefer the concrete versions. However, there is a possibility that the concrete versions actually contained more information than the abstract versions. Paivio, Yuille, and Madigan (1968) found that meaningfulness, as measured by number of associations, is correlated with both concreteness and imageability ($r = .56$ and $.72$, respectively). Therefore the concrete, imageable

versions of the story may have presented the Ss with more complex information than the abstract versions, through the richness of their associations with other materials. By extension of the predictions of information theory, then, the Type I Ss could be expected to prefer the abstract (simple) versions, whereas the Type IV Ss could be expected to prefer the concrete (more complex) versions.

This explanation can account for the Type I Ss' preference for abstract materials. However, an additional assumption must be made to explain the Type IV Ss' results. There is evidence that more abstract Ss are able to image material more readily than concrete Ss. Harvey (1963), and Harvey and Kline (1965) found that Type IV Ss are more able to act 'as if' and to assume the roles of others than are Type I Ss. Since both the ability to act 'as if', and the ability to form images and associations involve the ability to go beyond present stimuli, this may be interpreted as evidence that Type IV Ss are better at imaging than are Type I Ss. This ability could mean that the abstract and concrete versions were less different in number of images and amount of associated information for Type IV Ss than for Type I Ss. This is supported by the fact that the concrete versions were rated slightly more imageable by the Type I Ss, while there were no differences for the Type IV Ss. This would explain the insignificant results for the Type IV Ss, since, for them, both versions would have contained additional information through association with other materials. The slight preference of Type IV Ss for the concrete versions may be an indication that these still contain a greater frequency of additional associations, in spite of the Ss' ability to process the abstract materials.

However, this interpretation does not explain why the Type I Ss rate the abstract (simple) versions as slightly more difficult to understand. It has been assumed, throughout, that information complexity is difficult to understand; however, there is an additional possibility that richness of associations is a form of information complexity which is not difficult to process. Verbal learning research (e.g. Underwood and Schulz, 1960) indicates that more meaningful materials (i.e. those with greater frequency of associations) are actually easier to learn than less meaningful stimuli. This means that the concrete versions, with more associations, would present more information to both types of Ss than would the abstract version, without being more difficult to understand.

There is a third explanation for these data which merits consideration. The positive evaluation of the abstract versions by the Type I Ss may be a result, not of amount or type of information, but rather of prior experience with this style of writing. Many school English instructors praise verbally sophisticated writing of the type used in the abstract versions, and in terms much like the evaluative ratings used here. There is evidence (Harvey, 1964; Tieman, 1965) that Type I Ss depend on this type of authority for guidelines for their beliefs and actions, and they may be using these cues as criteria in their evaluations of the excerpts. The Type IV Ss are less dependent on these cues, and, consequently, do not base their evaluations of the stories on the same criteria.

This may explain why the Type I Ss prefer the abstract versions even though they find them difficult to understand. However, it does not provide any explanation for the Type IV results, if their insignificant tendency to prefer the concrete versions is not spurious. A complete

explanation may require both this authority hypothesis and the association-complexity hypothesis that precedes it. The Type I's, for example, may prefer the abstract stories because of their deference to the standards of an authority, or because it actually contains less information and is easier for them to process. The Type IV Ss, on the other hand, may prefer the concrete versions because of their richness of associations or their tendency to prefer these versions may be spurious, and they may not be affected by variations in abstractness. Such conjecture goes far beyond the information available in the present experiment, but it indicates directions for subsequent research.

In conclusion, this research does suggest that information theory concepts, which easily accounted for preferences for single complex materials, are not directly applicable to preferences for abstractness. One reason for this may be that abstractness of information is a qualitative rather than a quantitative dimension, i.e. whereas complexity can be simply defined in terms of number of elements, abstractness is an effect of type of information. The reactions to information abstractness seem to depend on additional factors, such as whether the information leads to the formation of additional images, whether it is more or less meaningful, and whether it is associated with other elements having positive evaluations. Information theory, with its emphasis on quantification, does not seem to be able to cope with these additional facets of information which are incorporated in abstractness.

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APPENDIX A
INDIVIDUAL - TOPICAL INVENTORY (FORM A)

Instructions

You will be given some situations and topics to which we would like you to respond. The responses are given in pairs. You are to choose one response from each pair. Choose the response that most closely fits your opinion or feeling and indicate your choice by blacking "A" or "B" corresponding to the response chosen. Always choose one member of each pair. Never choose both members of the pair and do not skip over any of the pairs. If you agree with both, choose the one you agree with most strongly. If you do not agree with either, choose the one you find the least disagreeable of the two.

Example:

Here is an example of the way the questions will be asked and the way they should be answered. The manner in which you will indicate your choice between the two given responses is illustrated below:

When I am confused....

Pair No.	
(i)	
A	B
I try to find a solution and end the confusion.	I completely ignore the fact I am confused.
(ii)	
A	B
I break out into a nervous sweat.	I remain calm at all times.

How to respond:

First: Decide which response you agree with most.

Second: Indicate which response you agree with most by blacking in the identifying letter on the IBM sheet. Thus, if in comparing the first pair of statements, you agree with the statement, "I try to find a solution and end the confusion," more than with the statement, "I completely ignore the fact that I am confused," you would black in the letter "A" (above the chosen statement). Having chosen one (never both, never either) statement from the first pair of statements, you would then move on to the second pair. If, in considering the second pair, you find that you agree more with the statement, "I remain calm at all times," (as compared to the statement, "I break out into a nervous sweat") you would black in the letter "B" on the IBM sheet.

On the pages that follow there are 36 different pairs of responses. There are six pairs on a page. You are to select one response from each pair, the one that more accurately shows your opinion or feeling and record your choice by blacking in the letter indicating the statement chosen. Be frank and indicate, in each case, your true feeling or opinion or the reaction which you actually would make in the situation. Do not indicate how you should feel or act; rather, indicate how you do feel and act.

Make sure that you are aware of the situation or topic that each pair of responses refers to. You will find the situation or topic identified at the top of each page. All items on the page refer to the situation or topic appearing at the top of that page.

When you are finished, your paper should contain 36 marks. Check back and make sure that you have made 36 choices, no more no less.

- Remember: (1) Respond only once for each pair; that is, choose one member of the pair, never both, never neither. Indicate your choice by blacking in either "A" or "B".
- (2) When you are finished you should have made 36 circles.

Work at your own rate of speed but work straight through the inventory without stopping. Once you have completed a page do not return to it.

YOU MAY BEGIN

1. Imagine that someone has criticized you. Choose the response from each pair that come closest to your feelings about such criticism.

Indicate your choice by blacking in either "A" or "B" on the IBM sheet.

Pair No.

(1)

A

I try to take the criticism, think about it, and value it for what it is worth. Unjustified criticism is as helpful as justified criticism in discovering what other people's standards are.

B

I try to accept the criticism but often find that it is not justified. People are too quick to criticize something because it doesn't fit their standards.

(2)

A

I try to determine whether I was right or wrong. I examine my behavior to see if it was abnormal. Criticism usually indicates that I have acted badly and tends to make me aware of my own bad points.

B

It could possibly be that there is some misunderstanding about something I did or said. After we both explain our viewpoints, we can probably reach some sort of compromise.

(3)

A

I listen to what the person says and try to accept it. At any rate, I will compare it to my own way of thinking and try to understand what it means.

B

I feel that either I'm not right, or the person who is criticizing me is not right. I have a talk with that person to see what's right or wrong.

(4)

A

I usually do not take it with good humor. Although, at times, constructive criticism is very good, I don't always think that the criticizer knows what he is talking about.

B

At first I feel that it is unfair and that I know what I am doing, but later I realize that the person criticizing me was right and I am thankful for his advice. I realize that he is just trying to better my actions.

(5)

A

I try to ask myself what advantages this viewpoint has over mine. Sometimes both views have their advantages and it is better to combine them. Criticism usually helps me to learn better ways of dealing with others.

B

I am very thankful. Often I can't see my own errors because I am too engrossed in my work at the time. An outsider can judge and help me correct the errors. Criticism in everyday life usually hurts my feelings, but I know it is for my own good.

(6)

A

It often has little or no effect on me. I don't mind constructive criticism too much, but I dislike destructive criticism. Destructive criticism should be ignored.

B

I try to accept and consider the criticism. Sometimes it has caused me to change myself; at other times I have felt that the criticism didn't really make much sense.

2. Imagine that you are in doubt. Choose the response from each pair that comes closest to your feelings about such doubt. Indicate your choice by blacking either "A" or "B" on IBM sheet.

When I am in doubt . . .

Pair No.

(7)

A

I become uncomfortable. Doubt can cause confusion and make one do a poor job. When one is in doubt he should ask and be sure of himself.

B

I find myself wanting to remove the doubt, but this often takes time. I may ask for help or advice if I feel that my questions won't bother the other person.

(8)

A

I don't get too upset about it. I don't like to ask someone else unless I have to. It's better to discover the correct answer on your own.

B

I usually go to someone who knows the correct answer to my question. Sometimes I go to a book which will set me straight by removing the doubt.

(9)

A

I first try to reason things out and check over the facts. Often I approach others to get ideas that will provide a solution.

B

I think things over, ask questions, and see what I can come up with. Often several answers are reasonable and it may be difficult to settle on one.

(10)

A

I realize that I'll have to decide on the correct answer on my own. Others try to be helpful, but often do not give me the right advice. I like to judge for myself.

B

I usually try to find out what others think, especially my friends. They may not know the answer, but they often give me some good ideas.

(11)

A

I look over the problem and try to see why there is a doubt. I try to figure things out. Sometimes I just have to wait awhile for an answer to come to me.

B

I try to get some definite information as soon as possible. Doubt can be bad if it lasts too long. It's better to be sure of yourself.

(12)

A

I consider what is best in the given situation. Although one should not rush himself when in doubt, he should certainly try to discover the right answer.

B

I act according to the situation. Sometimes, doubt can be more serious than at other times and many of our serious doubts must go unanswered.

3. Imagine that a friend has acted differently toward you. Choose the response from each pair that comes closest to your feelings about such an action. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

When a friend acts differently towards me . . .

Pair No.

(13)

A

I am not terribly surprised because people can act in many different ways. We are different people and I can't expect to understand all his reasons for acting in different ways.

B

I am usually somewhat surprised but it doesn't bother me very much. I usually act the way I feel towards others. People worry too much about others' actions and reactions.

(14)

A

I find out why. If I have done something wrong I will try to straighten out the situation. If I think he's wrong, I expect him to clear things up.

B

I feel that I may have caused him to act in a different way. Of course, he may have other reasons for acting differently which would come out in time.

(15)

A

I first wonder what the trouble is. I try to look at it from his viewpoint and see if I might be doing something to make him act differently toward me.

B

It is probably because he has had a bad day, which would explain this different behavior; in other cases he may just be a changeable kind of person.

(16)

A

It is probably just because something is bothering him. I might try to cheer him up or to help him out. If these things didn't work I would just wait for him to get over it.

B

I try to understand what his different actions mean. I can learn more about my friend if I try to figure out why he does things. Sometimes the reasons may not be very clear.

(17)

A

There has to be a definite reason. I try to find out this reason, and then act accordingly. If I'm right I'll let him know it. If he's wrong, he should apologize.

B

I usually let him go his way and I go mine. If a friend wants to act differently that's his business, but it's my business if I don't want to be around when he's that way.

(18)

A

I don't get excited. People change and this may cause differences. It is important to have friends, but you can't expect them to always be the same.

B

I like to get things back to normal as soon as possible. It isn't right for friends to have differences between them. Whoever is at fault should straighten himself out.

4. Think about the topic of people in general. Choose the response from each pair that comes closest to your thoughts about people. Indicate your choice by blacking either "A" or "B" on IBM sheet.

This I believe about people . . .

Pair No.	
(19)	
A Whatever differences may exist between persons, they can usually get along if they really want to. Although their ideas may not agree, they probably still have something in common.	B People can learn from those who have different ideas. Other people usually have some information or have had some experience which is interesting and can add to one's knowledge.
(20)	
A People can act in all sorts of ways. No single way is always best, although at certain times a particular action might be wiser than others.	B Each person should be able to decide the correct thing for himself. There are always a few choices to be made and the individual himself is in the best position to pick the right one.
(21)	
A Some people think they know what's best for others and try to give advice. These people shouldn't make suggestions unless asked for help.	B There are certain definite ways in which people should act. Some don't know what the standards are and therefore need to be straightened out.
(22)	
A I can tell if I am going to get along with a person very soon after meeting him. Most people act either one way or another and usually it is not difficult to say what they are like.	B It's hard for me to say what a person is like until I've known him a long time. People are not easy to understand and often act in unpredictable ways.
(23)	
A People have an outside appearance that usually isn't anything like what can be found on the inside, if you search long and hard enough.	B Each person is an individual. Although some people have more good or bad points than others, no one has the right to change them.

(24)

A

People can be put into categories on the basis of what they're really like. Knowing the way a person really is helps you to get along with him better.

B

People are unlike one another in many respects. You can get along with people better and better understand them if you are aware of the differences.

5. Think about the general topic of leaders. Choose the response from each pair that comes closest to your thoughts about leaders. Indicate your choice by blacking either "A" or "B" in IBM sheet.

Leaders . . .

Pair No.

(25)

A

Leaders do not always make the right decisions. In such cases, it is wise for a man to look out for his own welfare.

B

Leaders are necessary in all cases. If a leader cannot make the right decisions another should be found who can.

(26)

A

Leaders cannot provide all the answers. They are like other people--they have to try to figure out what action is necessary and learn from their mistakes.

B

Leaders make decisions sometimes without being sure of themselves. We should try to understand this and think of ways to help them out.

(27)

A

I like a leader who is aware of how the group feels about things. Such a leader would not lead any two groups in exactly the same way.

B

A person should be able to put his confidence in a leader and feel that the leader can make the right decision in a different situation.

(28)

A

There are times when a leader shouldn't make decisions for those under him. The leader has the power to decide things, but each man has certain rights also.

B

A leader should give those under him some opportunity to make decisions, when possible. At times the leader is not the best judge of a situation and should be willing to accept what others have to say.

(29)

A

Some leaders are good, others are quite poor. Good leaders are those who know what is right for the man under them. These leaders deserve the respect of every man.

B

Leaders cannot be judged easily. Many things go to make up good leadership. Most people fall short in some way or another, but that is to be expected.

(30)

A

Leaders are needed more at certain times than at others. Even though people can work out many of their own problems, a leader can sometimes give valuable advice.

B

Some people need leaders to make their decisions. I prefer to be an individual and decide for myself, when possible. Most leaders won't let you do this.

6. Imagine that someone has found fault with you. Choose the response from each pair that comes closest to your feelings about such a situation. Indicate your choice by blacking either "A" or "B" on IBM sheet.

When other people find fault with me . . .

Pair No.

(31)

A

It means that someone dislikes something I'm doing. People who find fault with others are not always correct. Each person has his own ideas about what's right.

B

It means that someone has noticed something and feels he must speak out. It may be that we don't agree about a certain thing. Although we both have our own ideas, we can talk about it.

(32)

A

I first wonder if they are serious and why they have found fault with me. I then try to consider what they've said and make changes if it will help.

B

If enough people point out the same fault, there must be something to it. I try to rid myself of the fault, especially if the critics are people "in-the-know."

(33)

A

They have noticed something about me of which I am not aware. Although criticism may be hard to take, it is often helpful.

B

They are telling me something they feel is correct. Often they may have a good point which can help me in my own thinking. At least it's worthwhile to consider it.

(34)

A

I may accept what is said or I may not. It depends upon who is pointing out the fault. Sometimes best to just stay out of sight.

B

I accept what is said if it is worthwhile, but sometimes I don't feel like changing anything. I usually question the person.

(35)

A

I like to find out what it means; since people are different from one another, it could mean almost anything. A few people just like to find fault with others but there's usually something to be learned.

B

There is something to be changed. Either I am doing something wrong or else they don't like what I'm doing. Whoever is at fault should be informed so that the situation can be set straight.

(36)

A

I don't mind if their remarks are meant to be helpful, but there are too many people who find fault just to give you a hard time.

B

It often means that they're trying to be disagreeable. People get this way when they've had a bad day. I try to examine their remarks in terms of what's behind them.

CHECK AND MAKE SURE THAT YOU'VE CHOSEN ONE MEMBER OF EACH PAIR

(A TOTAL OF 36 MARKS)

NORMS FOR THE ITI¹

Decile	System			
	1	2	3	4
10	11	13	13	15
9	10	12	12	14
8	9	11	12	14
7	8	10	11	12
6	8	9	10	12

System scoring. If a S scores 9th or 10th decile in one system and 8th or lower in all others, classify him in his highest system. Ss who score 8th Decile in one system and 6th or lower in all others may also be classified in their highest scoring system.

¹The norms are based on 387 first-year Psychology students at the University of Alberta (1968-69).

APPENDIX B
STORY EXCERPTS

1. Abstract Version

Fun with a Stranger

All season the children who were due to start school under Miss Snell had been warned about her. The older children would tell them that they were going to have trouble, that Mrs. Cleary was all right (She taught the more fortunate part of the grade), but that they had better beware of Miss Snell. So it happened that the morale of Miss Snell's class was low even before school started in September and she did little in the initial weeks to improve it.

She was probably sixty, a coarse woman with masculine features, and her attire, if not her very presence seemed to exude that arid essence that is the smell of school. She was strict and humorless, preoccupied with eliminating what she maintained was intolerable: mumbling, slumping, day-dreaming, frequent trips to the bathroom, and, most odious of all, coming to school without proper supplies. Her eyes were keen, and when anyone sent out an appeal to try to borrow something from someone else, it almost never succeeded. She would demand to know what the trouble was and call the offender by name. And the offender, caught in the middle of an appeal, could only blush and say 'nothing'. She would then demand that whoever it was stop mumbling, stand up and tell her if he or she had come to school without proper supplies again.

And there would follow a long lecture on proper supplies that ended only after the offender had come forward to receive the missing article from the collection on Miss Snell's desk, had been made to thank her repeatedly and had promised, in progressively increasing tones until he could be heard by everyone, not to break it or chew the point.

It was worst with erasers because there was more frequently a shortage of them, owing to a general tendency to chew them off the ends of pencils. Miss Snell kept an amorphous old eraser on her desk, and she seemed extremely proud of it. She frequently informed the class that that was her eraser and that she'd had it for many years. Years, no less. (And this was not difficult to believe, for the eraser looked as timeworn as the hand that brandished it.) She would declare that erasers were not playthings, that they were not to be chewed since they weren't edible and that they were never lost unless one was foolish or careless. Erasers were needed for work and must be taken care of. And then she would ask why the class couldn't accomplish this with their erasers. Never had there been a class as thoughtless, unthinking and immature about its supplies.

She never seemed to lose her temper, but it would almost have been better if she did, for it was the spiritless redundance of the scolding that made everyone depressed. When Miss Snell singled someone out for a special upbraiding it was an ordeal by talk. She would come close to her victim, her eyes would stare unblinking into his, and her mouth would labor to pronounce his guilt, grimly and deliberately

until all color faded from the day. She seemed to have no favorites, once she even picked on a girl who always had adequate supplies, and did nearly everything right. She was mumbling while reading aloud, and when she continued to mumble after several warnings, Miss Snell went over, took her book away and lectured her at great length. The girl appeared bewildered for a time, then she succumbed to the ultimate humiliation of crying in class.

It was not uncommon to cry in Miss Snell's class, even for boys. And, ironically, it always seemed to be during the lull after such a scene - when all one could hear was someone's spasmodic, suppressed sobs and the remainder of the class stared straight ahead in discomfort - that the sound of laughter would float in from Mrs. Cleary's class across the hall.

(Simple Ending)

Children's villains must be totally abhorrent and there was no denying that Miss Snell completely fulfilled those requirements. Even her attempts at friendship were in the interests of pedagogy. She once awkwardly said that learning new words is like making friends and that everyone takes pleasure in making friends. For instance, at the beginning of the year they were all strangers, but she had decided she should make an effort to get acquainted, since you can't very well have fun with a stranger. And then she said that that was just the way it was with words.

When she said something like that, it caused more suspicion than anything else. The students knew this was only a way of persuading them

to learn their lessons. So when children from other classes would demand to know how bad she actually was, they would try to change the subject. She was just too depressing to talk about.

(Complex Ending)

Still, they could not detest Miss Snell, for children's villains must be totally abhorrent, and there was no denying that Miss Snell was sometimes nice in her own awkward, groping manner. She remarked once that learning a new word was like making a friend, and that everyone takes pleasure in making friends. At the beginning of the year they had all been strangers, but she had wanted to become acquainted with them, and so she had made the effort. It was confusing initially, but soon she had made friends with all of them. She told them that later they would have good times together, perhaps something near Christmas, and she added that she would have regretted not making that effort because you can't have fun with a stranger. And then she smiled shyly and said that that was the way it was with words.

When she said something like that, it was more embarrassing than anything else, but it left the children with a vague sense of responsibility toward her, and often prompted them into a loyal reticence. When children from other classes demanded to know how bad she actually was, they would reply that she was not too bad and attempt to change the subject.

2. Concrete Version

Fun with a Stranger

All that summer the boys and girls who were due to start the third grade under Miss Snell had been warned about her. "Boy you're gonna get it," the older children would say. "Mrs. Cleary's all right" (Mrs. Cleary taught the other, luckier half of the third grade) - "She's fine, but boy that Snell - you better watch out." So it happened that the morale of Miss Snell's class was low even before school started in September, and she did little in the first weeks to improve it.

She was probably sixty, a big raw-boned woman with a man's face, and her clothes, if not her very pores seemed to emit that dry odor of pencil shavings and chalk dust that is the smell of school. She was strict and humorless, preoccupied with rooting out what she held intolerable: mumbling, slumping, day-dreaming, frequent trips to the bathroom, and, worst of all, "coming to school without proper supplies". Her small eyes were sharp, and when somebody sent out a stealthy alarm of whispers and nudges to try to borrow a pencil from somebody else, it almost never worked. "What's the trouble back there", she would demand. "I mean you, John Gerhardt." And John Gerhardt, caught in the middle of a whisper, could only turn red and say, "nothing".

"Don't mumble. Is it a pencil? Have you come to school without a pencil again? Stand up when you're spoken to."

And then she would give a long lecture on Proper Supplies that ended only after John Gerhardt had come forward to receive a pencil

from the small neat store on Miss Snell's desk, had been made to say "Thank you, Miss Snell," and to repeat, until he said loud enough for everyone to hear, a promise that he wouldn't break it or chew its point.

With erasers it was even worse because they were often in short supply, since the children often chewed them off the ends of the pencils. Miss Snell kept a big, shapeless old eraser on her desk, and she was very proud of it. "This is my eraser," she would say, shaking it at the class. "I've had this eraser for five years. Five years." (And this was not hard to believe, for the eraser looked as old and grey and worn-down as the hand that waved it.) "I've never played with it because it's not a toy. I've never chewed it because it's not good to eat. And I've never lost it because I'm not foolish and I'm not careless. I need this eraser for my work and I've taken good care of it. Now, why can't you do the same with your erasers. I've never had a class that was so foolish, and so careless and so childish about its pencils and erasers."

She never seemed to lose her temper, but it would almost have been better if she did, for it was the flat, dry repetition of her scolding that got everybody down. When Miss Snell singled someone out for a special lecture, it was an ordeal by talk. She would come up to within a foot of her victim's face, her small eyes would stare unblinking into his, and the wrinkled grey flesh of her mouth would labor to pronounce his guilt, grimly and deliberately until the day seemed to become colorless. She had no favorites, once she even picked on Alice Johnson, who always had plenty of supplies, and did nearly everything right. Alice

was mumbling while reading aloud, and when she continued to mumble after several warnings, Miss Snell descended and took her book away and lectured her for ten minutes running. Alice looked stunned at first; then her eyes filled up, her mouth twitched into terrible shapes, and she gave in to the ultimate disgrace of crying in class.

It was not uncommon to break into tears in Miss Snell's class, even among the boys. And, ironically, it was always right after such a scene - when the only sound in the room was someone's jerky, half-checked sobs and the rest of the class stared straight ahead in embarrassment that the clear, cheerful noise of group laughter would float in from Mrs. Cleary's class across the hall.

(Simple Ending)

For boys and girls, villains must be totally detestable, and there was no denying that Miss Snell completely fulfilled those requirements. Even her attempts at friendship were in the interests of teaching them their lessons. She once awkwardly said "When we learn a new word its like making a friend and we all like to make friends, don't we? Now, for instance, when school began this year, you were all strangers to me and I decided I should make the effort to learn your names and remember your faces. You can't very well have fun with a stranger, can you?" She went on, "And that's just the way it is with words.

When she said something like that, it caused more distrust than anything else. The children knew this was only a way of getting them to learn words. So when boys and girls from the other classes would demand to know how bad she really was, they tried to change the subject. She was just too depressing to talk about.

(Complex Ending)

Still, they could not hate Miss Snell, for children's villains must be totally detestable, and there was no denying that Miss Snell was sometimes nice in her own clumsy, groping way. "When we learn a new word, it's like making a friend", she said once. "And we all like to make friends, don't we? Now, for instance, when school began this year you were all strangers to me, but I wanted very much to learn your names and remember your faces, and so I made the effort. It was confusing at first, but before long I'd made friends with all of you. And later on we'll have some good times together - oh, perhaps a little party at Christmas-time - and then I know I'd be very sorry if I hadn't made that effort, because you can't very well have fun with a stranger, can you?" She gave them a homely, shy smile. "And that's just the way it is with words."

When she said something like that, it was more embarrassing than anything else, but it did leave the children with a certain blurred sense of responsibility toward her, and often prompted them into a loyal reticence when boys and girls from the other classes demanded to know how bad she really was. "Well, not too bad", they would say uncomfortably, and try to change the subject.

APPENDIX C
DEPENDANT MEASURES

COURSE NAME: _____

NAME: _____

SELECTION LETTER: _____

I.D. NUMBER: _____

Below is a series of questions about the short story excerpt you just read. Circle the number which seems to you to be the one best answer to each question. Feel free to look back to the text if you need to. There is no time limit, just answer the questions as quickly and accurately as possible. Make sure you mark an answer for every question.

1. Did the author seem to be writing from the point of view of an adult or of a child?

Adult's point of view . 2 3 4 5 Child's point of view

2. How well did the author develop the character of the teacher?

Very well 1 2 3 4 5 6 Very poorly

3. Did the personality of the teacher, as presented here, come across as simple or complex in nature?

Very simple character 1 2 3 4 5 6 Very complex character

4. Did the author write in a way that was easy to understand?

Very simple to understand 1 2 3 4 5 6 Very difficult to understand

5. If you were to describe the author's style of writing as abstract or concrete, which would you say it was?

Very concrete 1 2 3 4 5 6 Very abstract

6. How easy is it to form a mental picture of the events described in the story?

Very easy to picture	1	2	3	4	5	6	Very difficu to picture
-------------------------	---	---	---	---	---	---	----------------------------

7. How interesting was the story to read?

Very interesting	1	2	3	4	5	6	Very uninteresting
------------------	---	---	---	---	---	---	--------------------

8. Would you be interested in discussing the story with someone else?

Very interested	1	2	3	4	5	6	Very uninterested
-----------------	---	---	---	---	---	---	-------------------

9. How much did you enjoy reading the story?

Very enjoyable	1	2	3	4	5	6	Very uninterested
----------------	---	---	---	---	---	---	-------------------

10. Would you like to read other selections by the same author?

Very much like to	1	2	3	4	5	6	Like to not at all
----------------------	---	---	---	---	---	---	-----------------------

Below are three additional questions concerning your background and interest in literature. Please answer them as accurately as possible by placing an 'X' in the appropriate space.

1. How many University level English courses have you ever taken?
(Count each half term course or its equivalent as 1.)

Number of courses: 0 _____
1 _____
2 _____
3 _____
4 _____
5 or more _____

2. On the average, how many books do you read in a month's time?

Number of books: 0 _____
1 _____
2 _____
3 _____
4 _____
5 or more _____

3. If you were to rate your general interest in literature, how would you rate yourself?

Very interested _____
Somewhat interested _____
Neither interested nor uninterested _____
Somewhat uninterested _____
Very uninterested _____

APPENDIX D

INSTRUCTIONS

Good Morning. My name is Kerrie Pain and I am a graduate student in Psychology. I am working this summer on my Master's degree and also as a part-time research assistant for Dr. Thorngate, one of the professors in the Psychology department. Dr. Thorngate is concerned with assessing possible differences between the attitude of spring session students, summer session students and winter session students. Hopefully, a knowledge of such differences could help in setting up courses and programs more suited to the different students' needs.

The second study is very different from the first. It is being conducted to help me gain information for my Master's degree. It is well known that people react differently to different aesthetic materials such as paintings, literature, etc. and we are trying to evaluate what it is in these materials that makes people react as they do.

If you agree to participate in these studies, all of your responses will be strictly confidential. Although there is a place for your name and I.D. number on the answer sheets, it is not necessary for you to fill these in. If, for any reason, you find it impossible to take part in this research project, feel free to leave, although I urge you to stay, since it is very important for both projects to obtain a representative sample.

I'm going to give each of you a booklet containing the attitude questionnaire for Dr. Thorngate's study, an IBM sheet to record your

answers to this questionnaire and a question and answer booklet for my study on aesthetic judgment. The instructions for both questionnaires are included in the booklet, please read them very carefully before beginning. Work straight through the whole booklet, when you are finished make sure the sheets are clipped together and return them to me. Are there any questions?

PRINTED INSTRUCTIONS FOR AESTHETIC JUDGMENT QUESTIONNAIRE

As mentioned before, the second study is one dealing with aesthetic judgments. We are interested in how people react to different aesthetic materials. Following this page are two short booklets: the first contains a character description taken from a short story and the second contains a series of questions asking for your reactions to it. Read the description carefully, then answer the questions. (The directions concerning how to answer these questions are in the question booklet, please read them carefully.) Please note that there are 3 pages of questions following the character description, make sure you complete them all since it is very important that all of the questions be answered. Again, there is no time limit, just work as quickly and accurately as possible.

Thank you for your co-operation.

APPENDIX E

SUMMARIES OF OVERALL ANALYSES OF VARIANCE

A. PREFERENCE RATINGS

Table 1Interest in Reading Excerpt

Source	SS	df	MS	F	p
A: S Type	.61	1	.61	.31	
B: Abstractness	2.06	1	2.06	1.03	
A x B	12.18	1	12.18	6.12	<.02
C: Complexity	.10	1	.10	.05	
B x C	.02	1	.02	.01	
A x C	3.26	1	3.26	1.64	
A x B x C	.78	1	.78	.39	
Error	103.54	52	1.99		

Table 2Interest in Discussing Excerpt

Source	SS	df	MS	F	p
A: S Type	.19	1	.19	.08	
B: Abstractness	2.91	1	2.91	1.24	
A x B	7.91	1	7.91	3.37	<.08
C: Complexity	7.91	1	7.91	3.37	<.08
B x C	2.12	1	2.12	.90	
A x C	8.83	1	8.83	3.76	<.06
A x B x C	2.61	1	2.61	1.11	
Error	122.10	52	2.35		

Table 3
Enjoyment of Excerpt

Source	SS	df	MS	F	p
A: S Type	.51	1	.51	.30	
B: Abstractness	.02	1	.02	.01	
A x B	6.00	1	6.00	3.57	<.07
C: Complexity	.38	1	.38	.23	
B x C	.00	1	.00	.00	
A x C	2.86	1	2.86	1.70	
A x B x C	.18	1	.18	.11	
Error	87.26	52	1.68		

Table 4
Desire to Read Other Selections

Source	SS	df	MS	F	p
A: S Type	.00	1	.00	.01	
B: Abstractness	.25	1	.25	.10	
A x B	2.92	1	2.92	1.90	
C: Complexity	.77	1	.77	.31	
B x C	.15	1	.15	.06	
A x C	2.89	1	2.89	1.18	
A x B x C	1.14	1	1.14	.46	
Error	127.43	52	2.45		

B. OTHER INFORMATION

Table 5
Ratings of Character Complexity

Source	SS	df	MS	F	p
A: S Type	.27	1	.27	.12	
B: Abstractness	.03	1	.03	.01	
A x B	1.49	1	1.49	.67	
C: Complexity	13.11	1	13.11	5.89	<.02
B x C	.87	1	.87	.39	
A x C	1.98	1	1.98	.89	
A x B x C	.42	1	.42	.19	
Error	115.69	52	2.22		

Table 6
Ratings of Character Development

Source	SS	df	MS	F	p
A: S Type	1.43	1	1.43	.08	
B: Abstractness	2.31	1	2.31	1.30	
A x B	6.49	1	6.49	3.66	<.07
C: Complexity	.83	1	.83	.47	
B x C	.34	1	.34	.19	
A x C	2.98	1	2.98	1.68	
A x B x C	.05	1	.05	.03	
Error	92.19	52	1.77		

Table 7
Ratings of Abstractness

Source	SS	df	MS	F	p
A: S Type	.95	1	.95	.46	<.01
B: Abstractness	16.67	1	16.67	8.20	
A x B	.70	1	.70	.34	
C: Complexity	.77	1	.77	.37	
B x C	.10	1	.10	.05	
A x C	1.79	1	1.79	.87	
A x B x C	3.63	1	3.63	1.79	
Error	105.70	52	2.03		

Table 8
Ratings of Imageability

Source	SS	df	MS	F	p
A: S Type	.26	1	.26	.30	
B: Abstractness	1.27	1	1.27	1.46	
A x B	1.49	1	1.49	1.71	
C: Complexity	.17	1	.17	.20	
B x C	.47	1	.47	.54	
A x C	.00	1	.00	.00	
A x B x C	.05	1	.05	.05	
Error	45.42	52	.87		

Table 9
Ratings of Ease of Understanding

Source	SS	df	MS	F	p
A: S Type	.00	1	.00	.00	
B: Abstractness	.02	1	.02	.02	
A x B	2.05	1	2.05	1.69	
C: Complexity	.06	1	.06	.05	
B x C	1.22	1	1.22	1.01	
A x C	.08	1	.08	.07	
A x B x C	4.42	1	4.42	3.64	< .07
Error	63.14	52	1.21		

APPENDIX F
SUMMARIES OF TYPE I ANALYSES OF VARIANCE
A. PREFERENCE RATINGS

Table 1
Interest in Reading Excerpt

Source	SS	df	MS	F	p
A: Abstractness	10.88	1	10.88	4.17	< .06
B: Complexity	2.02	1	2.02	.77	
A x B	.48	1	.48	.19	
Error	57.40	22	2.61		

Table 2
Interest in Discussing Excerpt

Source	SS	df	MS	F	p
A: Abstractness	9.16	1	9.16	4.31	< .05
B: Complexity	15.00	1	15.00	7.06	< .01
A x B	4.23	1	4.23	1.99	
Error	46.76	22	2.13		

Table 3
Enjoyment of Excerpt

Source	SS	df	MS	F	p
A: Abstractness	2.38	1	2.38	1.42	
B: Complexity	2.38	1	2.38	1.42	
A x B	.07	1	.07	.04	
Error	36.92	22	1.68		

B. OTHER INFORMATION

Table 4
Ratings of Character Complexity

Source	SS	df	MS	F	p
A: Abstractness	.88	1	.88	.35	
B: Complexity	2.20	1	2.20	.87	
A x B	1.12	1	1.12	.44	
Error	55.69	22	2.53		

Table 5
Ratings of Character Development

Source	SS	df	MS	F	p
A: Abstractness	7.42	1	7.42	3.86	< .07
B: Complexity	.30	1	.30	.15	
A x B	.30	1	.30	.15	
Error	42.29	22	1.92		

Table 6Ratings of Abstractness

Source	SS	df	MS	F	p
A: Abstractness	10.88	1	10.88	4.63	<.05
B: Complexity	2.20	1	2.20	.94	
A x B	2.20	1	2.20	.94	
Error	51.69	22	2.35		

Table 7Ratings of Imageability

Source	SS	df	MS	F	p
A: Abstractness	2.48	1	2.48	3.09	<.10
B: Complexity	.06	1	.06	.07	
A x B	.37	1	.37	.46	
Error	17.62	22	.80		

Table 8Ratings of Ease of Understanding

Source	SS	df	MS	F	p
A: Abstractness	1.12	1	1.12	1.21	<.04
B: Complexity	.00	1	.00	.00	
A x B	4.62	1	4.62	5.01	
Error	20.26	22	.92		

APPENDIX G

SUMMARIES OF TYPE IV ANALYSES OF VARIANCE

A. PREFERENCE RATINGS

Table 1Interest in Reading Excerpt

Source	SS	df	MS	F	p
A: Abstractness	2.39	1	2.39	1.55	
B: Complexity	1.25	1	1.25	.81	
A x B	.30	1	.30	.19	
Error	46.13	30	1.54		

Table 2Interest in Discussing Excerpt

Source	SS	df	MS	F	p
A: Abstractness	.69	1	.69	.28	
B: Complexity	.01	1	.01	.00	
A x B	.01	1	.01	.00	
Error	75.33	30	2.51		

Table 3
Enjoyment of Excerpt

Source	SS	df	MS	F	p
A: Abstractness	3.80	1	3.80	2.26	
B: Complexity	.65	1	.65	.39	
A x B	.11	1	.11	.06	
Error	50.33	30	1.68		

B. OTHER INFORMATION

Table 4
Ratings of Character Complexity

Source	SS	df	MS	F	p
A: Abstractness	.61	1	.61	.31	
B: Complexity	14.28	1	14.28	7.14	< .02
A x B	.05	1	.05	.02	
Error	60.00	30	2.00		

Table 5
Ratings of Character Development

Source	SS	df	MS	F	p
A: Abstractness	.60	1	.60	.36	
B: Complexity	3.94	1	3.94	2.37	
A x B	.07	1	.07	.04	
Error	49.90	30	1.66		

Table 6
Ratings of Abstractness

Source	SS	df	MS	F	p
A: Abstractness	5.94	1	5.94	3.30	< .08
B: Complexity	.12	1	.12	.07	
A x B	1.44	1	1.44	.80	
Error	54.00	30	1.80		

Table 7
Ratings of Imageability

Source	SS	df	MS	F	p
A: Abstractness	.01	1	.01	.01	
B: Complexity	.13	1	.13	.14	
A x B	.13	1	.13	.14	
Error	27.80	30	.93		

Table 8
Ratings of Ease of Understanding

Source	SS	df	MS	F	p
A: Abstractness	.93	1	.93	.65	
B: Complexity	.15	1	.15	.11	
A x B	.56	1	.56	.39	
Error	42.88	30	1.43		

APPENDIX H

CORRELATION MATRICES

A. Type I Ss

	1	2	3	4	5	6	7	8	9	10
1. Adult Point of View	1.00	-.09	.06	.24	.10	.12	-.01	.09	.12	.07
2. Well Developed Character		1.00	-.54***	.08	.62***	.01	.78***	.34*	.63***	.73***
3. Simple Personality			1.00	-.02	-.18	.05	-.40**	-.17	-.42**	-.34*
4. Easy to Understand				1.00	.10	.44**	.14	.17	.31	.39**
5. Concrete Writing					1.00	.07	.58***	.49***	.43**	.63
6. Imageable						1.00	.14	.16	.23	.23
7. Interesting to Read							1.00	.63***	.83***	.79***
8. Interesting to Discuss								1.00	.68***	.61***
9. Enjoyable									1.00	.77***
10. Read Others										1.00

B. Type IV Ss

	1	2	3	4	5	6	7	8	9	10
1. Adult Point of View	1.00	-.19	-.13	-.37**	-.12	-.16	.19	.11	.13	-.04
2. Well Developed Character		1.00	-.04	.15	.21	.46***	.24	-.07	.24	.26
3. Simple Personality			1.00	.22	.35**	.21	-.21	-.28	-.23	-.07
4. Easy to Understand				1.00	.53***	.43**	.15	-.11	-.03	.34**
5. Concrete Writing					1.00	.42**	.02	-.33*	-.02	.01
6. Imageable						1.00	.16	-.29*	-.01	.07
7. Interesting to Read							1.00	.41**	.78***	.67***
8. Interesting to Discuss								1.00	.39**	.56***
9. Enjoyable									1.00	.65***
10. Read Others										1.00

* p<.10

** p<.05

*** p<.01

**** p<.001

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